

Application No. 10/786,507
Filed: February 25, 2004
TC Art Unit: 3726
Confirmation No.: 4009

THE CLAIMS

1. (Currently Amended) A method of making a fiber-reinforced composite material part, ~~blank from at least one porous fiber structure~~, the method comprising the steps of:

providing at least one porous fiber structure;

consolidating the porous fiber structure by forming within it a deposit of a refractory material by partially densifying the fiber structure so as to bond together the fibers of the fiber structure by said deposit to enable the fiber structure to be handled without being deformed, while leaving the pore volume of the porous fiber structure being reduced by no more than 40% of its initial value by said partial densification so as to leave empty the major fraction of the initial pore volume of the fiber structure;

subsequently implanting rigid pins through the consolidating consolidated porous fiber structure, whereby a reinforced consolidated fiber blank is obtained; and;

wherein said at least one fiber structure is consolidated by reducing its pore volume by no more than 40% of its initial value obtaining said composite material part by further densifying said fiber blank.

2. (Currently Amended) A method of making a fiber-reinforced composite material part, ~~blank by bonding together porous fiber structures in order to obtain a blank of desired shape~~, the method comprising the ~~following~~ steps of:

providing a plurality of porous fiber structures;

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consolidating each porous fiber structure by forming within it a deposit of a refractory material by partially densifying the fiber structure so as to bond together the fibers of the fiber structure by said deposit to enable the fiber structure to be handled without being deformed, ~~while leaving the pore volume of the porous fiber structure being reduced by no more than 40% of its initial value by said partial densification so as to leave~~ empty the major fraction of the initial pore volume of the fiber structure;

putting the consolidated porous fiber structures together; connecting ~~them~~ the consolidated porous fiber structure together by implanting pins of rigid material through the adjoining consolidated porous fiber structures, whereby a fiber blank is obtained; and

~~wherein said at least one fiber structure is consolidated by reducing its pore volume by no more than 40% of its initial value~~ obtaining said composite material part by further densifying said fiber blank.

3. (Canceled)

4. (Previously Presented) A method according to claim 1, wherein said at least one fiber structure is consolidated by reducing its pore volume by an amount lying in the range 8% to 40% of its initial value.

5. (Previously Presented) A method according to claim 1, wherein said at least one fiber structure used has a pore volume ratio lying in the range 50% to 70%, and consolidation is

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performed so as to reduce the pore volume ratio down to a value lying in the range 40% to 60%.

6. (Previously Presented) A method according to claim 1, wherein said at least one fiber structure is consolidated by forming a deposit of ceramic or of carbon.
7. (Previously Presented) A method according to claim 6, wherein said at least one fiber structure is consolidated by chemical vapor infiltration.
8. (Previously Presented) A method according to claim 7, wherein said at least one fiber structure is consolidated by forming a ceramic deposit by chemical vapor infiltration after forming an interphase layer on the fibers of the fiber structure, said interphase layer lying between the fibers and the ceramic deposit.
9. (Previously Presented) A method according to claim 6, wherein said at least one fiber structure is consolidated by being impregnated with a liquid composition containing a ceramic or carbon precursor, and by transforming the precursor into ceramic or carbon.
10. (Original) A method according to claim 9, wherein a composition is used containing a ceramic or carbon precursor in solution.

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11. (Original) A method according to claim 1, wherein pins are used that have been made by densifying and stiffening a yarn or tow by means of a matrix.
12. (Original) A method according to claim 1, wherein pins are used that are made in the form of rigid monofilaments.
13. (Original) A method according to claim 1, wherein pins are used in the form of sticks of thermostructural composite material.
14. (Original) A method according to claim 1, wherein the pins are implanted in at least two different directions.
15. (Canceled)